

## CLAIMS:

1. A magnetoresistive sensor for operation with a magnetized encoder, which is equipped with a zone with magnetic north and south poles arranged alternately along a direction of motion, comprising a Wheatstone bridge configuration with a first bridge arm between a first supply terminal and a first signal output terminal of the Wheatstone bridge configuration, a second bridge arm between the first supply terminal and a second signal output terminal of the Wheatstone bridge configuration, a third bridge arm between a second supply terminal and the first signal output terminal of the Wheatstone bridge configuration, and a fourth bridge arm between the second supply terminal and the second signal output terminal of the Wheatstone bridge configuration, wherein each of the bridge arms comprises an ohmic resistance element with a resistance-value dependence on the magnetic field strength of a magnetic field influencing the ohmic resistance element in accordance with a defined characteristic, characterized in that the characteristics of the ohmic resistance elements in the first and fourth bridge arms are selected to be at least essentially matching with each other and significantly different from the characteristics, selected to be at least essentially matching with each other, of the ohmic resistance elements in the second and third bridge arms.
2. A magnetoresistive sensor as claimed in claim 1, characterized in that the resistance values of the ohmic resistance elements in two bridge arms with characteristics selected to be at least essentially matching with each other are at least essentially constant over the magnetic field strength of the magnetic field to which the ohmic resistance elements are exposed.
3. A magnetoresistive sensor as claimed in claim 2, characterized in that the ohmic resistance elements with resistance values that are at least essentially constant over the magnetic field strength of the magnetic field to which the ohmic resistance elements are exposed are designed with a magnetic screening.

4. A motion and/or speed measurement device with a magnetized encoder which is equipped with a zone with magnetic north and south poles arranged alternately along a direction of motion, characterized by a magnetoresistive sensor as claimed in any one of claims 1 to 3.

5

5. A motion and/or speed measurement device as claimed in claim 4, characterized by a frequency evaluation device, which is coupled at one input with the signal output terminals of the Wheatstone bridge configuration and, at one output, emits a signal which constitutes a measure of the frequency of a signal emitted by the magnetoresistive

10 sensor.